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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

KUHAR, ANTHONY J

ART UNIT

PAPER NUMBER

1754

8

DATE MAILED: 02/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

09/832,078

Applicant(s)

CHOWDHURY ET AL.

Examiner

Anthony J Kuhar

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 December 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

Claims 1-3, 5, 7-8, 11-12, and 19-20 are rejected under 35 U.S.C. 102(e) or 102(b) as being anticipated by Pisani '773.

In column 4 of Pisani '773, materials are added to solid waste to reduce its permeability. Various phosphate additives such as monoammonium phosphate and triple superphosphate, iron additives such as iron chloride and iron nitrate, and chlorine additives such as iron chloride are taught in column 4. In addition, alkalis such as magnesium oxide, gypsum, and lime are also taught in column 4. Column 5, line 19 teaches additives are added in the form of an aqueous solution; therefore, the system is wetted. Pisani teaches the process for treating outside soils thus, normal outside temperatures encompass the temperatures, as recited in the instant claims, and Pisani teaches an incubation time of 7 days in column 6, line 29, which is sufficient to reduce the bioaccessibility of the heavy metals.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-4, 7-8, and 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pal '982.

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Column 2 discloses a treatment process for immobilizing heavy metal containing wastes. Column 5 teaches adding chlorides, lime, and gypsum as treatment materials, so it suggests adding chloride additives and alkali. Pyrophosphates and triple super phosphate, which are phosphate additives, are also taught in lines 5-10. Claim 22 also teaches adding sulphates of iron, which is an iron additive. Column 5, lines 45-60 teaches adding these materials simultaneously, and adding enough water to permit good chemical reaction. Column 6, line 36 then teaches the treatment materials are maintained at above 30 C. Column 6, line 30 teaches phosphates may be applied up to 30% by weight of the mixture. It appears the taught mixture would inherently reduce the bioaccessibility of heavy metals since the same materials and process steps are taught by Pal as in the instant claims, and the treatment time suggested by Pal would be sufficient.

Claims 1-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pisani '773.

In column 4 of Pisani '773, materials are added to solid waste to reduce its permeability. Various phosphate additives such as monoammonium phosphate and triple superphosphate, iron additives such as iron chloride and iron nitrate, and chlorine additives such as iron chloride are taught in column 4. In addition, alkalis such as magnesium oxide, gypsum, and lime are also taught in column 4. Column 5, line 19 teaches additives are added in the form of an aqueous solution; therefore, the system is wetted. Pisani does not specifically disclose the time and temperature for incubation; however, Pisani teaches the process for treating outside soils thus, normal outside temperatures encompass the temperatures, as recited in the instant claims, and Pisani teaches an incubation time of 7 days in column 6, line 29, which appears to be sufficient

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to reduce the bioaccessibility of the heavy metals. It would have been obvious to one of ordinary skill in the art at the time the invention was made to further optimize the incubation time as recited in instant claims 23-25 to obtain optimum results, see *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Pisani '773 does not specifically disclose the amount of the different additives or alkali as recited in the instant claims. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the specific amounts of the different additives and or alkali, as recited in the claims, in the process of Pisani '773 because one of ordinary skill in the art at the time the invention was made can determine the optimum or workable ranges of percent treatment additive through routine experimentation in order to effect the treatment of the heavy metals, see *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Claims 1-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stanforth '033 in view of Pisani '773.

Stanforth '033 teaches a method of treating solid waste containing leachable metals, including mixing the solid waste with a phosphate source, a carbonate source, or a ferrous sulfate. The treatment additives may be used individually or in combination such as sodium phosphate, superphosphate, triple superphosphate, phosphoric acid, sodium carbonate, sodium bicarbonate, calcium carbonate, and lime see column 5, lines 56-61). Ferrous sulfate can be used to control chromium leaching (see column 5, lines 64-65). A second additive is a pH controlling agent which is selected from the group consisting of magnesium hydroxide, magnesium oxide, calcium hydroxide, and calcium oxide (see column 5, lines 65-68).

Stanforth also discloses that dry mixing of the additive and pH control agent with the contaminated materials, ie., disposed waste or soils, does not necessarily cause the reaction which converts the lead and arsenic into substantially non-leachable forms (see column 6, line 77 to column 7, line 2) and that the reactions may not occur until the contaminated material is wetted by rain (see column 7, lines 21-23). Stanforth does not disclose a chlorine containing additive in addition to the phosphorus and iron containing additives. However, it would have been obvious to one of ordinary skill of the art at the time the invention was made to combine a chlorine additive with the iron and phosphate additives of Stanforth because Pisani '773 teaches a substantially similar process for treating metal containing hazardous waste as to chemically immobilize the heavy metals. Pisani discloses many of the same treatment agents as Stanforth, such as magnesium oxide, magnesium hydroxide, triple superphosphate, iron nitrate, iron sulfate, etc, but also discloses the use of chlorides, such as iron chloride. One of ordinary skill of the art would have been motivated to also use a chlorine additive in the process of Stanforth because Pisani '773 teaches virtually the same process as Stanforth for reducing the leachability of heavy metals.

Stanforth does not specifically disclose the time and temperature for incubation, however, Stanforth teaches that the reaction may occur once the contaminated material is wetted naturally by rain; thus, normal outside temperatures encompass the temperatures, as recited in the instant claims, and the amount of time recited in the instant claims would appear to be suggested by Stanforth or at least would be sufficient enough since the incubation time is a result effective variable.

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Stanforth does not specifically disclose the amount of the different additives or alkali as recited in the instant claims. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the specific amounts of the different additives and or alkali, as recited in the claims, in the process of Stanforth because Stanforth teaches that the additives and alkali are results-effective variables, which one of ordinary skill in the art at the time the invention was made can determine the optimum or workable ranges of said variables through routine experimentation in order to effect the treatment of the heavy metals, see *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Claims 1-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pisani '773 in view of Stanforth '033.

In column 4 of Pisani '773, materials are added to solid waste to reduce its permeability. Various phosphate additives such as monoammonium phosphate and triple superphosphate, iron additives such as iron chloride and iron nitrate, and chlorine additives such as iron chloride are taught in column 4. In addition, alkalis such as magnesium oxide, gypsum, and lime are also taught in column 4. Pisani does not specifically disclose the time and temperature for incubation; however, Pisani teaches the process for treating outside soils thus, normal outside temperatures encompass the temperatures, as recited in the instant claims, and Pisani teaches an incubation time of 7 days in column 6, line 29, which appears to be sufficient to reduce the bioaccessibility of the heavy metals. Although treatment additives are added in aqueous solution in column 5, line 19, Pisani '773 does may not explicitly disclose adding water to the treatment materials before incubation.

However, Stanforth '033 teaches adding water to the same treatment materials in a similar process for reducing the leachability of metals in contaminated waste. Stanforth also discloses that dry mixing of the additive and pH control agent with the contaminated materials, ie., disposed waste or soils, does not necessarily cause the reaction which converts the lead and arsenic into substantially non-leachable forms (see column 6, line 77 to column 7, line 2) and that the reactions may not occur until the contaminated material is wetted by rain (see column 7, lines 21-23).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to further optimize the incubation time as recited in the instant claims 23-25 to obtain optimum results, see *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Pisani '773 does not specifically disclose the amount of the different additives or alkali as recited in the instant claims. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the specific amounts of the different additives and or alkali, as recited in the claims, in the process of Pisani '773 because one of ordinary skill in the art at the time the invention was made can determine the optimum or workable ranges of percent additive through routine experimentation in order to effect the treatment of the heavy metals, see *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Claims 1-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Forrester '939.

Forrester '939 teaches a method of treating solid waste containing leachable metals, including mixing the solid waste with treatment materials such as ferric chloride, ferric sulfate,

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lime, magnesium oxide, and phosphates such as triple super phosphate (see column 3, lines 50-60 and column 5. Forrester '939 also discloses in column 6 mixing the treatment materials with the metal contaminants soil and spraying with water.

Forrester does not specifically disclose the time and temperature for incubation, however, Forrester teaches that the reaction may occur once the contaminated material is wetted naturally by rain; thus, normal outside temperatures encompass the temperatures, as recited in the instant claims, and the amount of time recited in the instant claims would appear to be suggested by Forrester or at least would be sufficient enough since the incubation time is a result effective variable.

Forrester '939 does not specifically disclose the amount of the different additives or alkali as recited in the instant claims. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the specific amounts of the different additives and or alkali, as recited in the claims, in the process of Forrester because one of ordinary skill in the art at the time the invention was made can determine the optimum or workable ranges of said variables through routine experimentation in order to effect the treatment of the heavy metals, see *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Claims 1-4, 7-9, 11, 17, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cody '600.

Cody '600 teaches reducing the amount of mobile lead in soil in column 3, by applying calcium, magnesium, and ammonium phosphate compounds. Triple superphosphate is taught in column 3, line 30. Calcium chloride fluoride orthophosphate is taught in column 4, line 15,

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which is a chlorine containing additive. Column 4, line 55 teaches iron oxide as an additional material. The calcium compounds recited in columns 3 and 4 also appear to be alkali compounds. Column 5, lines 38-45 teach adding the treatment agents to soil and enabling rainfall to interact with the soil components, immobilizing the lead contaminants.

Cody does not specifically disclose the time and temperature for incubation, however, Cody teaches that the reaction may occur once the contaminated material is wetted naturally by rain; thus, normal outside temperatures encompass the temperatures, as recited in the instant claims, and the amount of time recited in the instant claims would appear to be suggested by Cody or at least would be sufficient enough since the incubation time is a result effective variable.

Cody '600 does not specifically disclose the amount of the different additives or alkali as recited in the instant claims. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the specific amounts of the different additives and or alkali, as recited in the claims, in the process of Cody because one of ordinary skill in the art at the time the invention was made can determine the optimum or workable ranges of said variables through routine experimentation in order to effect the treatment of the heavy metals, see *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Claims 1 and 4-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ueshima '938 in view of Uetake '990.

Ueshima '938 teaches in the abstract treating harmful metals by adding a treating agent, kneading with water, and curing. Treatment agents are taught in column 3, line 60 to column 4,

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line 11. They include iron sulfate, iron chloride, and various phosphates. Column 8, line 8 teaches cement, e.g. an alkali, is used as an essential constitutive component. Column 13, line 7 teaches the mixture is cured for 7 days, but it does not disclose a temperature. At the time the invention was made, it would have been obvious to one of ordinary skill of the art to use heat and cure the mixture at the temperatures recited in the instant claims since it is common in the art to use heat to drive off water in the process of curing, as does Uetake '990 in column 2, lines 38-44.

Ueshima '938 does not specifically disclose the amount of the different additives or alkali as recited in the instant claims. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the specific amounts of the different additives and or alkali, as recited in the claims, in the process of Ueshima because one of ordinary skill in the art at the time the invention was made can determine the optimum or workable ranges of said variables through routine experimentation in order to effect the treatment of the heavy metals, see *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Conclusion

Applicant's arguments filed 12/9/02 have been considered but are moot in view of the new ground(s) of rejection.


The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Brown '771 teaches a process where phosphates and iron additives are employed to reduce the leachability of heavy metals; however, the chlorine component is not an additive but rather part of the metals which are treated.


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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony J Kuhar whose telephone number is 703-305-7095. The examiner can normally be reached on 8:45 am - 5:15 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stan Silverman can be reached on 703-308-3837. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-305-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.


AK
January 27, 2003


STEVEN BOS
PRIMARY EXAMINER
GROUP 1100